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ART UNIT	PAPER NUMBER
2192	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/582,839	MARFATIA ET AL.
	Examiner	Art Unit	
	ZIAUL CHOWDHURY	2192	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>23 March 2007</u>.
2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>1-6</u> is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) <u>1-6</u> is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a) ☐ All   b) ☐ Some * c) ☐ None of:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____.
      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date <u>3/15/2010</u>

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

Detailed Action

1.   This is the initial office action bases on the application filed on March 23rd, 2007 which claims 1 to 6 are presented for examination.

Status of Claims

2.   Claims 1-6 are pending, of which claim 1 is in independent form.

Oath/Declaration

3.   The office acknowledges receipt of a properly signed oath/declaration filed on March 23rd, 2007.

Effective Filing Date

4.   The effective filing date that has been considered for this application is June 14, 2006.

Information Disclosure Statement

5.   The information disclosure statements filed on June 14th, 2006, September 15th, 2008, and March 15th, 2010 comply with the provisions of 37 CFR 1.97, 1.98. They have been placed in the application file and the information referred to therein has been considered as to the merits.

Claim Rejections - 35 USC § 101

6.   35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

7.   Claims 1-6 are rejected under 35 U.S.C. § 101 because the claimed
invention is directed to non-statutory subject matter.

      As per claim 1, wherein claim 1 recites "An apparatus for migration and
conversion of software code from any source platform to any target platform
that migrates and/or converts any source application working on any platform
into a format of any target platform" – even though the limitation recites the
word "apparatus"; however, the claim itself does not disclose any hardware
component to realize any of the underlying functionality of the said apparatus's
implementation. Further, an ordinary skilled artesian would reasonably
interpret the recited "platform" as a group of software codes and software data
structure, wherein one software facilitates the conversion and migration of
another software, which means the above stated encoded software are all
intangible abstractions of software *per se* with no inherent physical structures.
Therefore, examiner will reasonably interpret the functionality of this
apparatus as an implementation of software alone, Software and computer
program *per se* do not fall within any category of patent-eligible subject matter.
Claim 1 is therefore ineligible for patent protection. *See* MPEP § 2106.

      Claims 2-6 depends from claim 1, and do not over come the deficiencies
stated above for claim 1. Therefore, claims 2-6 are also ineligible for patent
protection for the same reason. *See* MPEP § 2106.

Claim Rejections - 35 USC § 103

8.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for
all obviousness rejections set forth in this Office action:

      (a) A patent may not be obtained though the invention is not identically disclosed or
      described as set forth in section 102 of this title, if the differences between the subject
      matter sought to be patented and the prior art are such that the subject matter as a whole

would have been obvious at the time the invention was made to a person having ordinary
skill in the art to which said subject matter pertains. Patentability shall not be negatived by
the manner in which the invention was made.

9.   Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Pastilha et al. (US Patent No 5,678,044 –IDS of record) in view of

Goodman et al. (US Patent Application Publication No 2003/0225927 A1).

Per claim 1:

Pastilha discloses

An apparatus for migration and conversion of software code from any source

platform to any target platform that migrates and/or converts any source

application working on any platform into a format of any target platform (Col

2:45-48 –The system (apparatus) and method of the present invention achieves

these and other objects by providing a computerized tool (apparatus) for

<u>automating the processes necessary to successfully migrate a software system</u>

<u>from one environment to another</u> –emphasis added) comprises of:

an inputting means for accepting the entire source code of sample part in ASCII

> *to analyse the business logic of the source application* (Col 1:32-38 –
> Rehosting, however, is becoming more often a viable strategy for moving
> legacy applications from a mainframe (source) to a mid-range (target)
> platform. Rehosting is the physical movement of one or more business
> applications from one computing environment, such as mainframe, to
> another computing environment, such as a mid-range computing
> platform; Col 3:45-49 –The invention consists of components which
> automatically gather the information used <u>to evaluate candidate</u>
> <u>applications</u> (by an input means), which automatically convert software
> systems from their source operating environment to a new and different

targeted environment), *also receiving validation schemes of source front-end interface* (Col 4:62-67 –The discovery portion of the present invention supports a process which is an information-gathering function. Its purpose in a rehosting effort is to ascertain and <u>document</u> all <u>pertinent information</u> about an <u>application under consideration</u> for rehosting, including the environment in which it presently operates), *obtaining the definitions of the target back-end system* (Col 5:60-62 –heuristics 190 determine whether to rehost application software 130 based on the results of discovery 140 <u>in view of the designated target computing environment</u>), *the existing test scripts to facilitate the quality control phase of the generated code* (Col 10:11-14 –Following the analysis of application-specific data gathered by discovery 140, a candidate software application (or system) 130 will be judged as either suitable for rehosting or not suitable), *the source code entry points to business processes* (Col 1:34-38 –Rehosting is the physical movement of one or more business applications from one computing environment, such as mainframe, to another computing environment, such as a mid-range computing platform), *target environment specification or definitions which includes target platform(s)* (Col 5:60-62 –heuristics 190 determine whether to rehost application software 130 based on the results of discovery 140 <u>in view of the designated target computing environment</u>), *languages to be used* (Col 19:32-37 –a computer processor having a migration utility rehosting at least one job, at least one proc and at least one file of said software system to said target computing environment and converting job control language of said source computing environment into an interim rehosting language), *target database* (Refer to FIG 7, 480; and associated text), *coding standards* (Col 10:11-14 –Following the analysis of application-specific data gathered by discovery 140, a candidate software application (or system) 130 will be judged as either suitable for rehosting

or not suitable), *target architecture and framework* (Col 6:7-11 –estimate the resources required on a target mid-range platform if the system is migrated; estimate the complexity of the programs and jobs by analyzing job history (e.g.: CPU time vs. overall elapsed time) and program attributes (e.g.: language, size), manage the system migration effort, etc), *third party components* (Col 5:17-21 –some of the support features included as run-time services are Generation Data Group (GDG) administration, program and/or job submission and execution based on system return codes, file disposition processing and other production system monitoring activities), *existing applications which have to be plugged with target application* (Col 3:16-21 -A run-time services utility provides operational system support for the rehosted software system now within the target computing environment similar to operational system support previously available in the source computing environment based on the assessment and description), *and sample code for the application working in the target environment (if available)* (Col 3:29-31 –A run-time services utility residing on the computer processor and generates execution scripts from the interim rehosting language);

an analysing means for analysing the source schemes provided by the client to create target schemes (Col 2:66-67, Col 3:1-3 –The discovery utility (knowledge Engine) is also suited to <u>analyze the predetermined information to assess the feasibility of rehosting the candidate software application</u> from the source computing environment to the target computing environment), *analysing the business logic in the source application to create workflow diagrams that represent the source application processes* (Col 1:34-38 –Rehosting is the physical movement of one or more business applications from one computing environment, such as mainframe, to another computing environment, such as a mid-

range computing platform), *identifying the code segments in the source
application and analysing the target to generate the target architecture
and the technology associated with it* (Col 5:50-67 -Source code analyzer
160 interacts with data selector 150 and RDBMS 155 to analyze the
source code of each application software 130. The results of such
analysis is also stored in RDBMS 155. Similarly, JCL source analyzer
170 interacts with RDBMS 155 to analyze the JCL source and store the
results of such analysis in RDBMS 155. Report generator 180 generates
any number of requested reports based on the results of discovery 140
stored in RDBMS 155. Moreover, in another preferred embodiment of
the present invention, heuristics 190 determine whether to rehost
application software 130 based on the results of discovery 140 in view of
the designated target computing environment. Such embodiment of the
present invention would perform a rules-based analysis of the reports
generated by report generator 180 to recommend the class of machine to
use, and to suggested configuration, in the target computing
environment);

a setting up means for generating custom knowledge base where the existing KB

*is reviewed for particular migration and in case of no such KB exist, a
custom KB is created* (Col 2:61-66 -A computer processor having a
discovery utility is used to request predetermined information from the
source computing environment including the operating system, any
databases in the source computing environment, as well as from the
candidate software application);

a processing means for conversion of source code in format of target specification

*wherein the complete source code is passed through a knowledge engine
on the basis of iteration and during this time the knowledge engine*

remains coupled to the knowledge base for conversion of source code in format of target specifications (Col 3:56-62 –This is achieved by the present invention by gathering information about the software application candidate for rehosting (including the source computing environment in which it operates), converting data files and related job control statements used on virtually any source host to the corresponding formats required by a new targeted host processing environment, Col 10:28-31 –Migration 400 automatically converts all files and data elements from the formats used on source operating system 110 to the format requirements of target operating system 450); and *after each iteration the knowledge base is updated which leads to speedy and better conversion of source code as the Custom KB has now more structured information of source platform and source application with respect to target platform and target specifications* (Col 2:66-67, Col 3:1-5 - The discovery utility (knowledge Engine) is also suited to <u>analyze the predetermined information to assess the feasibility of rehosting the candidate software application</u> from the source computing environment to the target computing environment. <u>A relational database management system receives and stores the predetermined information and the results of the analysis performed by the discovery utility</u> (Thus, relational database saves information for next update on source application according to the information stored and updated in the relational database) –emphasis added); and

a documenting means for generation of reports during review of the process

stage and a summary report after the end of the conversion process (Col 3:35-40 -The system takes record descriptors (generation of reports) of data in the source environment that needs to be migrated and generates conversion programs for the data that get compiled. The compiled

programs are then executed against the source data, producing output
files that can be ported to the target environment; Col 9:43-47 –Based on
the reports generated, a recommendation may be made by the present
invention that the data be kept on a mainframe as a data repository
while the application itself be ported to a mid-range environment), which
consists of the code that is not converted automatically, this unconverted
code is then converted manually at applicants resource center (Col 9:64-
67 –A further illustration might be a case where the present invention
"discovers" that the programs in the application to be rehosted consist of
a mix of program languages, some of which cannot reasonably be
converted by any means other than re-writing),

Pastilha does not disclose:

obtaining UI (User Interface)/GUI (Graphical User Interface) details of the
source and target application;

However, Goodman discloses:

*obtaining UI (User Interface)/GUI (Graphical User Interface) details of the
source and target application* (Paragraph [0011] –a computer program product
includes program code for defining processes of displaying a view of a space on
the display coupled to the computer system, accepting signals from the user
input device coupled to the computer system, the signals specifying a
destination computing platform and a source computing platform, and deriving
at least one script that defines at least one software system or application
stored on the source computing platform)

It would have been obvious to one ordinary skill in the art at the time the
invention was made to combine Goodman's method in to Pastilha's method
because that would provide an efficient means for graphically control the over
all migration process and an further efficient means for observing the progress

of migration process in Pastilha's invention as once suggested by Goodman –
paragraph [0033-0034].

Per claim 2:

Pastilha discloses

   *wherein a 'Knowledge Base Database (KB)' is provided for understanding
the source application and source platform, as well as the target specifications
and target platform* (Col 2:61-67, Col 3:1-3 - A computer processor having a
discovery utility is used to request predetermined information from the source
computing environment including the operating system, any databases in the
source computing environment, as well as from the candidate software
application. The discovery utility is also suited to analyze the predetermined
information to assess the feasibility of rehosting the candidate software
application from the source computing environment to the target computing
environment).

Per claim 3:

Pastilha discloses

   *wherein a 'Knowledge Engine (KE)' is provided to extract the business logic
and database (back-end) schema of the source application systematically and
logically and to convert it into the format specified for the target application* (Col
134-38 –Rehosting is the physical movement of one or more business
applications from one computing environment, such as mainframe, to another
computing environment, such as a mid-range computing platform).

Per claim 4:

Pastilha discloses

   *wherein 'Knowledge Database' is updated after each
iteration by 'KE' to provide wider knowledge of source application during the*

conversion process, leading to speedy and better future conversions (Col 2:66-
67, Col 3:1-5 - The discovery utility (knowledge Engine) is also suited to
<u>analyze the predetermined information to assess the feasibility of rehosting the
candidate software application</u> from the source computing environment to the
target computing environment. <u>A relational database management system
receives and stores the predetermined information and the results of the
analysis performed by the discovery utility</u> (Thus, relational database saves
information for next update on source application according to the information
stored and updated in the relational database) –emphasis added).

Per claim 5:
Pastilha discloses
        wherein a report is generated after conversion, which
consist of, the unconverted source code by the automatic migration process (Col
9:15-26 -Before any file under consideration is migrated to the target
environment, it is reviewed to see if there are any characters (any bytes) in the
file that do not have a target environment equivalent. An example of such bytes
may include data stored in non-displayable mode. Thus, such characters will
need to be converted to a valid a target environment equivalent. <u>Discovery 140
also checks the file descriptor (copy member) for such things as field definition</u>
clauses with COMP-3, COMP SYNC, or COMP headings. These headings
indicate that the data contained in the <u>file is packed or binary and it cannot be
ported to a target environment without additional conversion</u>).

Per claim 6:
Pastilha discloses
        wherein any target platform as claimed in any of the
*preceding claims that learns from the iterations completed by 'Knowledge
Database' which increases the rate of automatic migration in next iteration* (Col

2:66-67, Col 3:1-5 - The discovery utility (knowledge Engine) is also suited to
<u>analyze the predetermined information to assess the feasibility of rehosting the</u>
<u>candidate software application</u> from the source computing environment to the
target computing environment. <u>A relational database management system</u>
<u>receives and stores the predetermined information and the results of the</u>
<u>analysis performed by the discovery utility</u> (Thus, relational database saves
information for next update on source application according to the information
stored and updated in the relational database) –emphasis added).

Conclusion

10.   The prior art made of record and have yet relied upon is considered
pertinent to applicant's disclosure.

(A). DelGaudio et al. (US Patent Application Publication No.
2005/0125522 A1), discloses –Disclosed are a <u>method of and system for</u>
<u>enterprise-wide migration</u>. The method comprises the steps of <u>creating</u>
<u>instances of databases for a migration,</u> for billing and reporting, and <u>reposting</u>
<u>reports; gathering information on the organization</u>, location, hardware, and
software affected by said migration into a database for planning said migration
–emphasis added (*See* Abstraction).

(B). Wesley V. Barnishan (US Patent Publication No. 6,654,950 B1),
discloses –it is an object of the present invention to provide a system that
supports modeling of legacy and target dialects, such a system being able, for
example, <u>to extract test information from Test Program (TP) source code written</u>
<u>in a legacy language/dialect (e.g., old versions of ATLAS, Ada, ANSI C, BASIC,</u>
<u>and L200) and target it to a new Automatic Test Equipment (ATE) employing a</u>
<u>modern programming language (e.g., LabWindows/CVI, LabVIEW, Visual</u>

Basic, Visual C++ and new versions of ATLAS). It is also an object of the
present invention using the same software rehosting system to provide reports
of statistical information about the input computer programs and to provide
formatted outputs of the input computer programs to other conventional
application programs such as spread sheet computer programs and flow
charting computer programs –emphasis added (*See* Summary of the invention).

    (C). Kumar et al. (US Patent Application Publication No. 2005/0160399
A1), discloses –Method for automatically migrating power builder application to
an open architecture is disclosed. The method includes converting to ASCII
character format stream, parsing the stream to form constructs, generating a
model from the constructs, analyzing the model –emphasis added (*See*
Abstraction).

    11. Any inquiry concerning this communication or earlier
communications from the examiner should be directed to ZIAUL CHOWDHURY
whose telephone number is (571)270-7750. The examiner can normally be
reached on Monday Thru Friday, 7:30AM To 9:00PM, Alternet Friday, Eastern
Time.

    If attempts to reach the examiner by telephone are unsuccessful, the
examiner's supervisor, TUAN Q. DAM can be reached on 571-272-3695. The
fax phone number for the organization where this application or proceeding is
assigned is 571-273-8300.

    Information regarding the status of an application may be obtained from
the Patent Application Information Retrieval (PAIR) system. Status information
for published applications may be obtained from either Private PAIR or Public
PAIR. Status information for unpublished applications is available through
Private PAIR only. For more information about the PAIR system, see
http://pair-direct.uspto.gov. Should you have questions on access to the

Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-
9197 (toll-free). If you would like assistance from a USPTO Customer Service
Representative or access to the automated information system, call 800-786-
9199 (IN USA OR CANADA) or 571-272-1000.

/ZIAUL   CHOWDHURY/   /Tuan Q. Dam/
Examiner, Art Unit 2192   Supervisory Patent Examiner, Art Unit 2192